

## OCCURRENCE OF THE BARNACLE *Balanus venustus* ON AN ATLANTIC MENHADEN, *Brevoortia tyrannus*, OFF SOUTH CAROLINA

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**Abstract:** An Atlantic menhaden (84.7 mm standard length, 105.7 mm total length) was captured 24 January 1983 with a half grown barnacle, *Balanus venustus*, firmly attached and embedded externally to the right posterior aspect of the abdominal cavity just below the mid line. The yearling menhaden was caught in oceanic waters (8 m depth, 9.4°C water temperature) located between Charleston and Bulls Bay, South Carolina.

**Key Words:** barnacle; Atlantic menhaden; *Balanus venustus*; *Brevoortia tyrannus*; association

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Many marine fishes have been reported with deformities or attached encrustments or growths. Attached growths are not known for the pelagic plankton feeding Atlantic menhaden, *Brevoortia tyrannus* (Dawson, 1964, 1966, 1971; Dawson and Heal, 1976). Even though hundreds of thousands of menhaden have been handled (JFG), tagged, etc., no barnacle-menhaden association was known until 24 January 1983. This paper reports the rare occurrence of a barnacle, *Balanus venustus* (Darwin), embedded in the right external muscles of the abdomen just below the midline of the body. The affected menhaden was one of 323 captured in a 12 m bottom otter trawl by the R/V LADY LISA in 8 m (9.4°C water temperature) of oceanic waters between Charleston and Bulls Bay, South Carolina (32°48.7'N lat., 79°38.7'W long.).

Originally frozen, the menhaden was photographed on thawing (Fig. 1) and preserved in 10% formalin with subsequent transfer to 95% ethanol to prevent erosion of the barnacle by the preservative (V. Zullo, University of North Carolina at Wilmington, pers. suggestion). The 84.7 mm standard length (105.7 mm total length) fish weighed 8.2 g and has now been deposited as UNC 17229 in the Institute of Marine Sciences Fish Collection, Morehead City, N.C.

Radiographs (Figs. 2 and 3) revealed that some skin had grown over the calcareous plates of the barnacle (*Balanus venustus*), so that only 4.7 × 5.3 mm × 2 mm high is presently visible. The total dimensions of the barnacle were 5.0 × 6.5 mm at its base. No antennae or stalks, which might have helped anchor the barnacle, were visible.

*Balanus venustus* is a common barnacle occupying intertidal and ocean shelf waters from Cape Cod to Brazil, including the Gulf of Mexico. *B. venustus* is



FIG. 1. Right lateral view ( $2.15\times$ ) of Atlantic menhaden illustrating embedded *B. venustus*.

primarily a summer breeder, usually in waters warmer than  $8^{\circ}\text{C}$ , with larvae occurring from May to December (Lang and Ackenhusen-Johns, 1981). *B. venustus*, within its range, is found on just about everything stationary (Camp et al., 1977) and has also been reported on the claw of the crustacean *Ovalipes stephansonii* (Haefner, 1985). The barnacle *Conchodermis virgatum* has been found attached to the free swimming gray triggerfish *Balistes caprisus* (Haefner, 1985). The gooseneck barnacle *Platylepas* has been reported attached to a freshwater gar (*Lepisosteus* sp.) by Zullo (1979).

We are unable to note another instance of a balanoid barnacle attached to a pelagic fish. It remains unresolved how the barnacle became associated with the yearling menhaden, for the menhaden is a schooling, constantly swimming species



FIG. 2. Radiograph, right lateral view ( $2.24\times$ ) of Atlantic menhaden to illustrate complete aspect of embedded *B. venustus*.



FIG. 3. Radiograph (2.75 $\times$ ) of Atlantic menhaden ventral view to note extent of embedding by *B. venustus*.

that frequents rivers and estuarine waters. While the larvae of each species could have encountered each other when in estuarine waters, it would seem unlikely that that encounter could have been long enough for the barnacle to become attached to the fish. Yet it happened.

*Acknowledgments:* Thanks are extended to Dr. Zullo of UNC-Wilmington for identifying the barnacle. Ann Manooch of NMFS, Beaufort Laboratory, assisted with the literature search. The R/V LADY LISA was operated by the South Carolina Marine Wildlife Resources Department, Charleston, S.C. The menhaden samples were made available by Dr. C. Wenner of the same department. Operating funds were provided by NOAA, NMFS under the MARMAP program. Herb Gordy provided the photographs.

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Received 22 September 1989